REMARKS

Reconsideration of the above-identified Application is respectfully requested. Claims 1-4 are in the case. Claims 5-16 and 19-23, previously withdrawn, have been canceled. Claims 17 and 18 were previously canceled. Claim 1 has been amended.

Regarding the rejection of Claims 1-4 under 35 U.S.C. § 102(b) as allegedly being anticipated by the patent to Hendricks, this rejection is respectfully traversed. Claim 1, the only independent claim in the case, now recites, as originally constituted when filed, a digital amplifier including a noise shaper and a dither generator arranged to introduce noise to the shaper, said generator using a seed value derived from a state variable of said shaper. A digital amplifier in accordance with Claim 1 has a dither signal with a very long limit cycle, as compared with prior art chaotic noise shapers. See the Specification at page 5, line 18 through page 6, line 3. Hendricks neither teaches nor suggests this, but, rather, teaches adapting the magnitude of his dither based on the value of the feedback gain factor of the converter, in order to maintain the output channel noise essentially constant and independent of the scaling factor of the converter.

Applicants also wish to point out that what is set forth in Claim 1 is also neither shown nor suggested by the patent to Komamura (U.S. Patent No. 5,497,154), cited in the Office Action dated June 17, 2003, against Claim 1 as presently re-constituted. Komamura's goal is to generate a sufficiently random dither signal which can be produced and reproduced before and after a quantization. So, Komamura does not have a dither generator using a seed value derived from a state variable of a noise shaper. Rather, Komamura has "an auto dither generating system, which generates a dither using digital audio data itself" (column 1, lines 40-43).

The other art of record is even less relevant.

Accordingly for the above reasons, it is respectfully submitted that Claim is neither shown nor suggested by Hendricks, Komamura, or, indeed, any of the art of record, whether considered individually or in any combination, and so is allowable.

It is respectfully submitted that for the same reasons Claims 2-4, all of which depend, either directly or indirectly, from Claim 1 are allowable as well, as well as for the additional limitations found therein. Thus, Claim 2 adds the limitation "wherein the number of bits in the generated noise exceeds that of the seed value". In an example disclosed in the Specification, wherein the state variables of the noise shaper are represented as N bits all together, and the number of bits in the maximal length shift register is S bits, the resulting dither generator consists of N+S bits. By contrast, for example, Komamura the LSB from the audio signal is shifted into a buffer and a mechanism is provided to map these data into a random signal. Since Komamura's technique relies on mapping of previous data and not on generating a random sequence itself, even discussing a limit cycle for his dither generator is problematic.

Wherefore, reconsideration and withdrawal of this rejection are respectfully requested.

It is respectfully submitted that the claims recite the patentably distinguishing features of the invention and that, taken together with the above remarks, the present application is now in proper form for allowance. Reconsideration of the application, as amended, and allowance of the claims are requested at an early date.

While it is believed that the instant amendment places the application in condition for allowance, should the Examiner have any further comments or suggestions, it is respectfully requested that the Examiner contact the undersigned in order to expeditiously resolve any outstanding issues.

To the extent necessary, the Applicants petition for an Extension of Time under 37 C.F.R. §1.136. Please charge any fees in connection with the filing of

this paper, including extension of time fees to the Deposit Account No. 20-0668 of Texas Instruments Incorporated.

Respectfully submitted,

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